MYCOTAXON

Volume 110, pp. 271–281 *October–December 2009*

Crepidotus kubickae – a forgotten name

Soňa Ripková

ripkova@fns.uniba.sk
Comenius University in Bratislava, Faculty of Natural Sciences
Department of Botany, Révová 39, SK-811 02 Bratislava, Slovakia

Abstract — Study and analysis of type and other specimens of *Crepidotus kubickae* and related taxa support the name as a distinct species.

Key words — *Basidiomycota*, *Inocybaceae*, taxonomy, nomenclature

Introduction

Only a few authors have used the name *Crepidotus kubickae*, originally described by Pilát (1949). In her monograph, which included a type study of *C. kubickae*, Senn-Irlet (1992) stated that the type represented only a variant of *C. cesatii* (Rabenh.) Sacc. 1877; she later (Senn-Irlet 1995) placed the name *C. kubickae* into synonymy with *C. cesatii* var. *subsphaerosporus*. Horak (2005) proposed *C. kubickae* as a synonym for *C. subepibryus* Pilát 1949.

One reason why *C. kubickae* is almost a forgotten name today may be that most recent authors (e.g., Comesaña & Castro 2000, Gerault 2005, Gonou-Zagou & Delivorias 2005, Roux 2006, Walleyn & Vandeven 2006) have followed Senn-Irlet's taxonomic concept for *Crepidotus*. Currently only Pouzar (2005) regards *C. kubickae* as a correct name.

In this paper, *C. kubickae* is accepted at the species rank; the characters supporting its independent status are presented.

Material and methods

The study is based on examination of 41 specimens of *Crepidotus* that include type and recent material. All studied specimens are those from the herbaria G, KRAM, PRM, and SLO. Data on specimens are not updated.

The microscopical structures were observed in dried material. The microscopical slides were prepared with 5% aqueous solution of KOH and a solution of Congo Red in ammonia (1 ml of 25% ammonia added in filtrated solution of 1.5 g of Congo Red in 50 ml of distilled water). The colours of microstructures were examined in KOH; the measurements were made under Congo Red. For the measurements (30 per specimen) of microcharacters (spores, cheilocystidia and basidia) min, max (in the parenthesis) and average +/- standard deviation values are presented. Q is ratio of length and width

of spores. Photomicrographs of the spores were made under the light Olympus BX41 microscope (LM) and scanning electron microscope (SEM). Morphological terms follow Vellinga (1988). The description of macrocharacters is brief and based only on the collectors' notes (no fresh material was available). Data on ecology are based on the "Specimens examined".

Taxonomic description

Crepidotus kubickae Pilát, Stud. Bot. Čechoslov. 10: 150, 1949

= *Crepidotus variabilis* var. *subsphaerosporus* J.E. Lange, Fl. Agaric. Danic. 5: IV, 1940

"Crepidotus variabilis var. *subsphaerosporus"* J.E. Lange, Dansk Bot. Ark. 9(6): 52, 1938, nom. inval. (Vienna Code, Art. 36.1)

"Crepidotus variabilis var. *subsphaerosporus"* J.E. Lange, Fl. Agaric. Danic. 4: 46, 1939, nom. inval. (Vienna Code, Art. 36.1)

"Crepidotus subsphaerosporus" (J.E. Lange) Kühner & Romagn., Fl. Analyt. Champ. Supér. (Paris), p. 76, 1953, nom. inval. (Vienna Code, Art. 33.4)

"Crepidotus subsphaerosporus" (J.E. Lange) Kühner & Romagn. ex Hesler & A.H. Sm., N. Amer. Sp. *Crepidotus*, p. 121, 1965, nom. inval. (Vienna Code, Art. 33.7)

≡ *Crepidotus cesatii* var. *subsphaerosporus* (J.E. Lange) Senn-Irlet, Persoonia 16: 53, 1995

Macrocharacters — pileus 0.5–4 cm, irregularly circular, rounded flabelliform or reniform, convex, plano-convex to applanate, slightly hygrophanous; margin inflexed, flat or waved, entire, undate to lobed; surface mat, tomentose, at the point of attachment villose, white, later whitish-greyish to pale beige; lamellae L = 10–28, l = 1–3, ventricose, crowded to distant, adnexed, at first white, later pale beige to brownish, with pink tint; edge fimbriate and whitish; stipe visible only in very young fruit-bodies.

Microcharacters — basidiospores (5.5–)6.8–8.3(–10) × (4.2–)5–6(–7) µm, Q = (1.2–)1.3–1.5(–1.6), broadly ellipsoid to ellipsoid, brownish-yellowish to yellowish in 5% KOH, in the LM echinulate, in the SEM distinctly echinulate with isolated spines; spines of 2 types: the larger ones up to 0.6 µm high, mostly conical attenuating to an obtuse apex and the smaller ones up to 0.4 µm high, conical to irregularly shaped, usually surrounding the larger ones (Figs 1, 4–6); basidia (21–)22–27(–31) × (6–)6.8–8.4(–9) µm, 4-spored, cylindrical, hyaline, thin-walled; cheilocystidia (24–)37.9–52(–64) × (6–)6.3–10.1 (–17) µm, narrowly utriform, clavate or cylindrical, in the upper part mostly branched, often antler-like, sometimes flexuous or angled, hyaline, thin-walled; pileipellis a transition between a cutis and a trichoderm, composed of cylindrical, hyaline, thin-walled, non-gelatinised and up to 6 µm thick hyphae without differentiated terminal cells, hyphae mostly straight; clamp-connections present in all tissues.

Ecology — In general, three types of habitats can be recognized: 1) *Picea abies* forests; 2) spruce forests with admixed *Betula pubescens* and *Salix aurita* and

with *Sphagnum* sp. div. in the herb layer; 3) mixed forests formed by *Fagus sylvatica*, *Abies alba* and *Picea abies* with admixed *Acer pseudoplatanus* and *Ulmus* sp. The lowest collecting site is at 780 m a.s.l., the highest at 1445 m a.s.l. The species grows saprotrophically, producing fruitbodies on wood and bark of decaying trunks, branches, stumps, and roots of *Picea abies*; some branches were covered by lichenised fungi such as *Hypogymnia physodes* and *Lepraria* sp. From May to November.

Specimens examined — ***Crepidotus kubickae*: CZECH REPUBLIC**. Poříčko nad Sázavou, ad terram inter muscis, 29.V.1949, J. Kubička *(PRM 665190*; holotype). All following specimens from the PRM were collected in the "montes Šumava", i.e. Šumava Mts., and were originally identified as *C. subsphaerosporus*: In clivo montis Jezerní hora supra lacum Čertovo jezero, occ. lacu, alt 1200 m, Piceetum ad truncum deiectum Piceae, 29.IX.1994, J. Holec (*PRM 885686*). In clivo supra lacum Laka pr. Prášily, mer.-occ. versus lacum, alt 1150 m, Piceetum humidum ad truncum emortuum Piceae, 30.IX.1994, J. Holec (*PRM 885969*). 1km or. versus Turnerova chata prope Srní, alt 950 m, silva mixta *Picea abies*, ad truncum iacentem, 25.VI.1996, J. Holec (*PRM 888556*). Černé jezero, sept. supra lacum, alt 1010 m, silva mixta *Picea abies*, ad truncum iacentem, 12.IX.1996, J. Holec (*PRM 889444*). Turfosum Blatenská slať, 2 km occ. versus Březník, mer. versus Modrava, alt 1250 m, ad trunc. emortuum Piceae, 17.IX.1996, J. Holec (*PRM 889343*). Horská Kvilda, inter Vydří most et Ranklovská rovina, Sphagno-Piceetum, alt 1100 m, ad truncum iacentem Piceae, 19.IX.1996, J. Holec (*PRM 889295*). Area defensa Jilmová skála sept. versus Zátoň prope Lenora, alt 1000 m, *Picea abies*, ad truncum iac., 16.X.1996, Z. Pouzar (*PRM 889541*). In valle rivi Hrádecký potok, 1 km mer.-or.-or. versus Srní, Piceetum + *Salix* etc., alt 780 m, *Picea abies*, ad truncum iacentem, 4.X.1997, J. Holec (*PRM 898385*). Povydří, loco "Černé stráně" (area defensa), 1 km mer.-or. versus Turnerova chata apud Srní, silva montana mixta (*Fagus*, *Abies*, *Picea*), alt 940 m, in colle situ mer.-occ., *Picea abies*, ad truncum iacentem, 6.X.1997, J. Holec (*PRM 898412*). Loco humido prope Zhůří, mons Huťská hora, 4 km or. versus Srní, *Sphagnum*, *Betula pubescens*, *Picea*, *Salix aurita*, alt 1010 m, in colle situ mer.-occ., *Picea abies*, ad truncum iacentem, 15.VI.1998, J. Holec (*PRM 892380*). Turfosum Hůrecké slatě, 0.6 km sept. versus Nová Hůrka prope Ž. Ruda, Sphagno-Piceetum, alt 880 m, *Picea abies*, ad truncum iacentem, 7.VII.1998, J. Holec (*PRM 896948*). Mons Plechý, inter Plechý et Trojmezí, occ. versus Nová Pec, silva virginea – Piceetum, alt 1340 m, in colle situ sept., *Picea abies*, ad codicem, 15.VII.1998, J. Holec (*PRM 897059*). Loco Debrník, 1.7 km mer. versus Železná Ruda, silva naturalis mixta (*Fagus*, *Picea*, *Abies*), alt 800 m, in colle situ mer.-occ., *Picea abies*, ad truncum iacentem., 21.IX.1998, J. Holec (*PRM 897332*). Mons Radvanovický hřbet, 2.7 km sept.-or. versus České Žleby, silva mixta (*Fagus*, *Picea*, *Acer pseudoplatanus*), alt 900 m, in colle situ mer.-or., *Picea abies*, ad truncum iacentem, 8.X.1998, J. Holec (*PRM 897562*). Mons Radvanovický hřbet, 2.9 km sept.-or. versus České Žleby, silva naturalis mixta (*Picea*, *Fagus*, *Abies*, *Ulmus* etc.), alt 900 m, in colle situ or., *Picea abies*, ad truncum iacentem, 8.X.1998, J. Holec (*PRM 897575*). Turfosum Mezilesní slať (area defensa), 3–4 km sept.-sept.-or. versus Kvilda, in valle rivi Hamerský potok, Sphagno-Piceetum, alt 1090 m, *Picea abies*, ad truncum iacentem, 18.IX.1999, Z. Pouzar (*PRM 898074*). Loco "Stará jímka" prope Prášilské jezero, 5.1 km mer.-mer.-or. versus Prášily, Piceetum montanum, alt 1140 m, in colle situ sept., *Picea abies*, ad truncum iacentem, 10.X.2000, J. Holec (*PRM 897882*). Area defensa

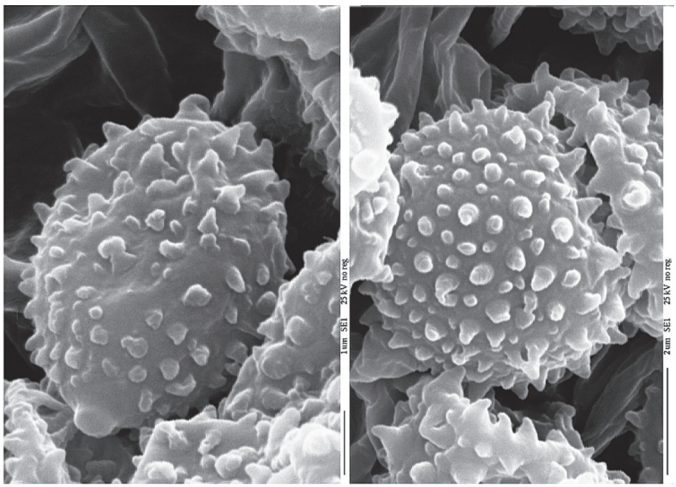


Fig. 1. *Crepidotus kubickae*: SEM photographs of spores (*PRM 665190*; holotype).

"Boubínský prales" (pars centralis), occ. versus Kaplické jezírko, cca. 3.5 km sept.-sept.-or. versus Zátoň apud Lenora, silva virginea mixta (*Fagus*, *Abies*, *Picea*), alt 990 m, in colle situ or., *Picea abies*, ad truncum iacentem, 29.X.2002, J. Holec (*PRM 900969*). Turfosum "Cikánská slať" (area defensa), pars. sept.-occ., 3 km mer.-occ. versus Modrava, Piceetum humidum + Sphagno-Piceetum, alt 1090 m, *Picea abies*, ad codicem, 8.VI.2004, J. Holec (*PRM 901812*). **POLAND.** Western Tatra Mts. (514.52), Sarnia Skała massif, lower part of Dolina Spadowiec valley, near Droga pod Reglami hiking trail, 49°16'43"N, 19°57'7"E, ?Abieti-Piceetum montanum, alt 930 m, on trunk of *Picea abies*, 8.XI.2000, A. Ronikier (*KRAM 50390* as *C. cesatii* var. *subsphaerosporus*). Western Tatra Mts. (514.52)), Sarnia Skała massif, Spaleniec ridge (between Dolina Ku Dziurze valley and Dolina Spadowiec valley), 49°16'20"N, 19°56'52"E, Dentario glandulosae-Fagetum, alt 1150 m, on wood and bark of *Picea abies*, 15.VI.2001, A. Ronikier (*KRAM 53294* as *C. cesatii* var. *subsphaerosporus*). Western Tatra Mts. (514.52), Sarnia Skała massif, lower part of Dolina Ku Dziurze valley, 49°16'43"N, 19°56'37"E, Dentario glandulosae-Fagetum, alt 920 m, on wood, stump and roots of *Picea abies*, 6.VII.2001, A. Ronikier (*KRAM 53295* as *C. cesatii* var. *subsphaerosporus*). High Tatra Mts. (514.53), Dolina Pańszczyca valley, lower part of the valley, about 100 m W from Polana Waksmundzka meadow, 49°16'4"N, 20°3'34"E, *Piceetum tatricum*, alt 1400 m, on wood of *Picea abies*, 19.VII.2000, A. Ronikier (*KRAM 50110* as *C. cesatii* var. *subsphaerosporus*). Tatrzański Park Narodowy, Dolina Suchej Wody, poniżej ujścia Żółtego Potoku do Suchej Wody. *Piceetum tatricum myrtilletosm*, alt 1360 m, na kłodzie *Picea excelsa*, 15.VIII.1973, Z. Heinrich (*KRAM 30284* as *C. subsphaerosporus*). Tatry, Tatrzański Park Narodowy, Dolina Rybiego Potoku, alt 1350 m, 2.VI.1972, Z. Heinrich (*KRAM 56059* not identified before). Tatry, Dolina Białki, między scroniskiem w Roztoce a Niżną Polaną pod Wołoszynem, alt 1020 m, na leżącym pniu *Picea*, 6.VI.1983, H. Komorowska (*KRAM 56048* not identified before). **SLOVAKIA.** Veporské vrchy Mts., Polomka, the Nature Reserve of Fabova hoľa, NNW of the bench mark Fabova hoľa (1438.8), spruce forest, alt

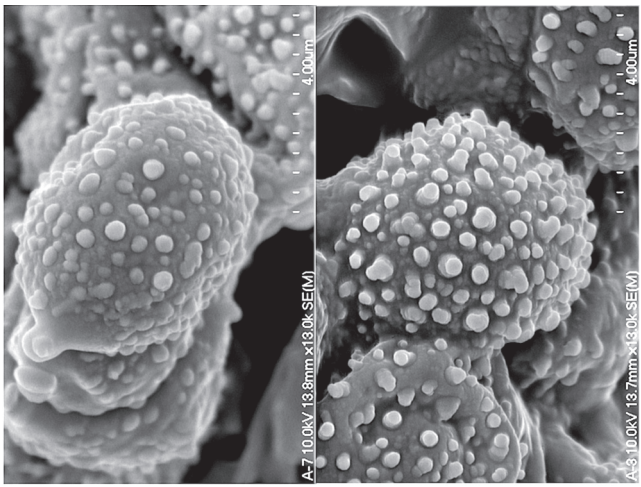
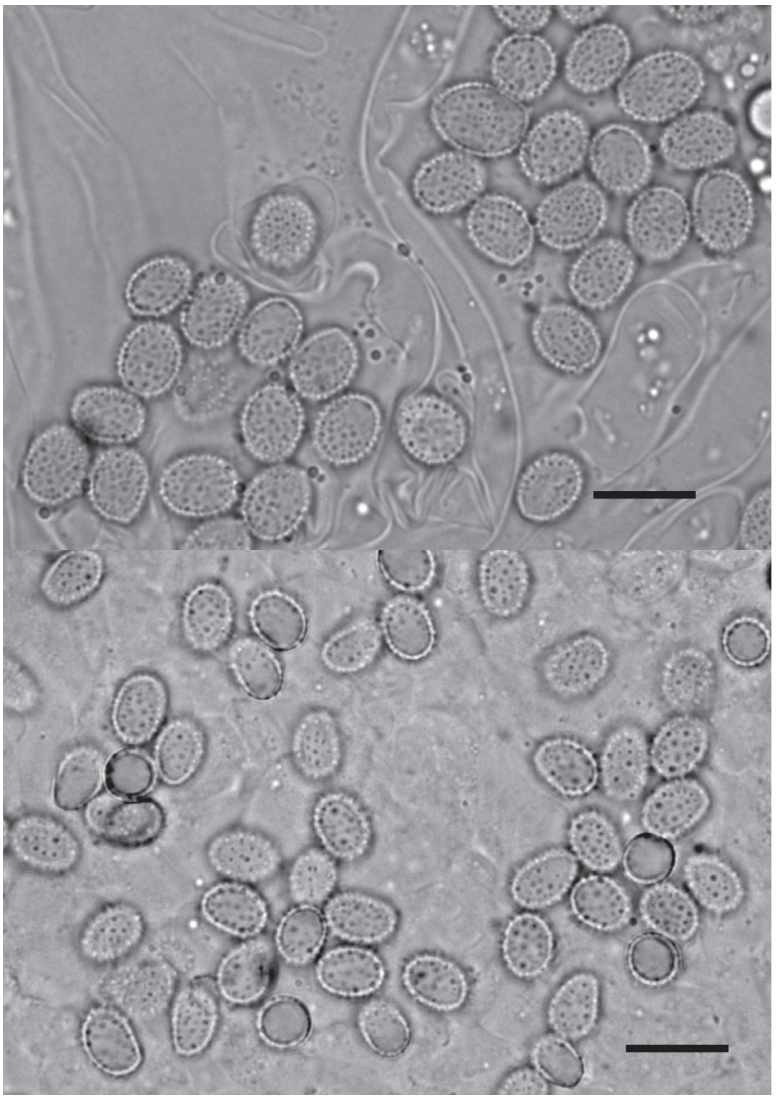


Fig. 2. *Crepidotus cesatii*: SEM photographs of spores (*SLO 610*).

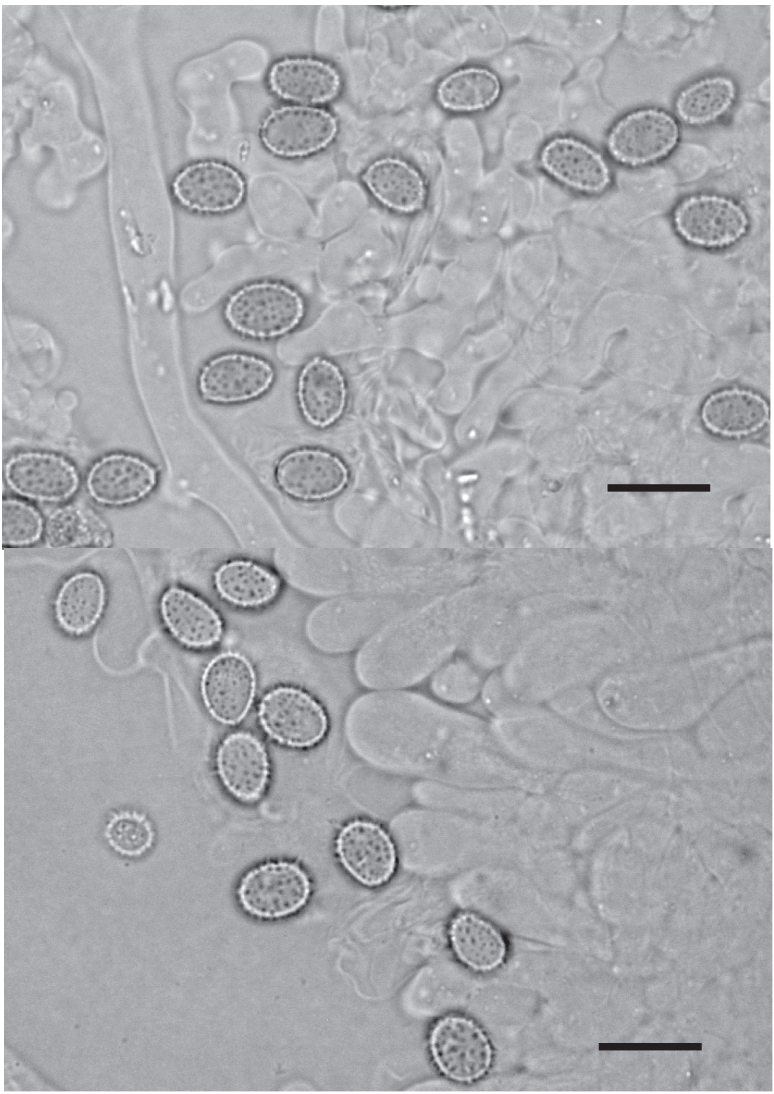
1400 m, on wood of fallen trunk of *Picea abies*, 7.X.2002, I. Mihál and D. Blanár (*SLO 701*). Veporské vrchy Mts., Pohronská Polhora, The NR of Fabova hoľa, NNW of the bench mark Fabova hoľa (1438.8), spruce forest, alt 1435–1445 m, on bark of fallen trunk of *Picea abies*, 25.XI.2008, D. Blanár (*SLO 702*). Stolické vrchy Mts., Krokava, the NR of Tŕstie, SEE of the bench mark Holcková (1101.8), spruce forest, alt 1100 m, on bark of fallen trunk of *Picea abies*, 16.X.2008, D. Blanár (*SLO 703*). **SWITZERLAND.** Bern, Röthenbach, Schineggschwand am Schallberg, alt 1000 m, Reisighaufen (*Picea*), Abieti-Fagetum, 11.X.1989, B. Senn-Irlet [*G 89/240* as *C. cesatii* var. *subsphaerosporus*; neotype].

***Crepidotus cesatii*: SLOVAKIA.** Záhorská nížina Lowland, Moravský Svätý Ján, ca. 4.5 km westward of the church of St. Ján Krstiteľ, flood plain forest *Salicion albae*, alt 153 m, on bark of fallen decaying branch of *Salix alba*, 24.VII.2001, S. Ripková (*SLO 601*). Podunajská nížina Lowland, Bratislava, the municipal part of Devín, Sedláčkov ostrov Island, flood plain forest, alt 135 m, on bark of decaying branch of standing *Acer campestre*, 2.IX.1998, S. Ripková (*SLO 602*). Biele Karpaty Mts., Nová Bošáca, the settlement of Grúň, locality Koryto, bank of the Predpolomský potok Stream, forest occupied by *Alnus glutinosa* and *Salix* sp. div., alt 338 m, on wood and bark of fallen decaying branch of deciduous tree, 9.VII.2002, S. Ripková (*SLO 603*). Malé Karpaty Mts., Kuchyňa, along the blue marked trail ca. 2.5 km NE of the church in the village, forest occupied by *Fagus sylvatica*, *Carpinus betulus*, *Quercus* sp., alt 340 m, on wood and bark of fallen decaying branch of deciduous tree, 13.X.2007, S. Ripková (*SLO 604*). Stolické vrchy Mts., Tisovec, the Protected Site of Vachtové jazierko, line vegetation dominated by *Salix* sp. div., alt 395 m, on wood and bark of decaying branch of standing *Salix caprea*, 7.II.2002, D. Blanár (*SLO 605*). Stolické vrchy Mts., Muránska Dlhá Lúka, the Červená valley, forest occupied by *Corylus avellana*, *Carpinus betulus* etc., alt 370 m, on wood of fallen branch of *Carpinus betulus*, 31.X.2001, D. Blanár (*SLO 606*). Revúcka vrchovina, Ratková, wetland Typhetum latifoliae, alt 285 m, on wood of fallen decaying branch of *Salix fragilis*, 12.XI.2001, D. Blanár (*SLO 607*). Slovenský kras



Figs 3–4. LM photographs of spores.
Fig. 3 (top). *Crepidotus cesatii* (*SLO 610*). Fig. 4 (bottom). *Crepidotus kubickae* (*SLO 703*).

Mts., Jelšava, locality Skalka, deciduous forest, NE exp., alt 320–360 m, on bark of branch of standing *Cornus mas*, 22.I.2002, D. Blanár (*SLO 608*). Muránska planina Mts., Muráň, the National Nature Reserve of Šarkanica, the Martinova valley, forest dominated by *Fagus sylvatica*, alt 560 m, on bark of fallen decaying branch of *Fagus sylvatica*, 31.VII.2002, D. Blanár (*SLO 609*). Vihorlatské vrchy Mts., the



Figs 5–6. LM photographs of spores.
Fig. 5 (top). *Crepidotus kubickae* (*PRM 665190*; holotype).
Fig. 6 (bottom). *Crepidotus cesatii* var. *subsphaerosporus* (*G 89/240*; neotype).

valley of the Dielový potok Stream, ca. 3 km SW of the church in the village of Podhoroď, forest dominated by *Carpinus betulus* and *Quercus petraea*, alt 250 m, on wood and bark of fallen decaying branch of deciduous tree, 19.X.2002, S. Ripková (*SLO 610*).

Comments — *Crepidotus variabilis* var. *subsphaerosporus* was validly published by Lange (1940). Kühner & Romagnesi (1953) and Hesler & Smith (1965) raised this variety to the specific rank as *C. subsphaerosporus,* but the name was not validly published in either work. Kühner & Romagnesi (1953) placed "*C. subsphaerosporus*" close to *C. cesatii* in their key. Although Hesler & Smith (1965) separated "*C. subsphaerosporus*" from *C. variabilis* (Pers.) P. Kumm. based on distinct spore characters, they did not question the relationship between the two taxa.

Three years after she had studied types of Pilát's *Crepidotus* species, including *C. kubickae* (Senn-Irlet 1992), Senn-Irlet (1995) used the name *C. variabilis* var. *subsphaerosporus* as a basionym for her new combination, *C. cesatii* var. *subsphaerosporus*. Although Senn-Irlet (1992) emphasized distinct differences in characters of spores of *C. kubickae* (shape, coloration and ornamentation), she concluded that the species is best interpreted as a variant of *C. cesatii*. Subsequently, she merged the name *C. kubickae* into the synonymy of *C. cesatii* var. *subsphaerosporus* (Senn-Irlet 1995).

I think that *C. kubickae* is related to *C. cesatii*. Both species have similar basidia (4-spored, cylindrical, hyaline, thin-walled) and cheilocystidia (narrowly utriform, clavate or cylindrical, in the upper part mostly branched, often antler-like, sometimes flexuous or angled, hyaline, thin-walled); for size of these structures see Table 1. Some differences can be found in the pileipellis, hyphae of which are mostly straight in *C. kubickae* and mostly coiled in *C. cesatii*. However, the decisive differences are in spore characters, namely in the shape and ornamentation. The spores of *C. kubickae* are broadly ellipsoid to ellipsoid, with the ratio of length and width (1.2–)1.3–1.5(–1.6); they are echinulate in the LM, after focusing carefully, and distinctly so in the SEM; they are covered by 2 types of isolated spines: the larger ones up to 0.6 µm high, mostly conical attenuating to an obtuse apex and the smaller ones up to 0.4 µm high, conical to irregularly shaped, usually surrounding the larger ones (Fig. 1). The spores of *C. cesatii* are subglobose, broadly ellipsoid to ellipsoid, with the ratio of length and width (1–)1.2–1.4(–1.45); they seem to be punctate to finely echinulate in the LM, but they are verrucose in the SEM, covered by isolated, rather elongated verrucas, sometimes slightly broadened at base, up to 0.4 µm high (Fig. 2). Observing the spores macerated in the 5% KOH solution in the LM, the differences are also in their colour: the spores of *C. kubickae* are brownish-yellowish to yellowish and the spores of *C. cesatii* are yellowish to hyaline. Ecological differences are also important. While *C. kubickae* prefers coniferous trees such as *Picea*, *Abies,* and *Pinus*, *C. cesatii* prefers hardwood, e.g. *Acer*, *Alnus*, *Cornus*, *Corylus*, *Fagus*, *Fraxinus*, *Salix*, *Tilia* ("Specimens examined", Senn-Irlet 1995, Ripková & Blanár 2004, Pouzar 2005).

Table 1. Comparison of microcharacters between *Crepidotus kubickae* and *C. cesatii*

	Crepidotus kubickae	*Crepidotus cesatii*
Basidiospores		
size	(5.5–)6.8–8.3(–10) × (4.2–)5–6(–7) µm	(5.5–)6.8–8.1(–9) × (5.2–)5.5–6.4(–7) µm
Q	(1.2–)1.3–1.5(–1.6)	(1–)1.2–1.4(–1.45)
shape	broadly ellipsoid to ellipsoid	subglobose, broadly ellipsoid to ellipsoid
colour in KOH solution	brownish-yellowish to yellowish	yellowish to hyaline
surface (seen in LM)	echinulate	punctate to finely echinulate
surface (seen in SEM)	echinulate, covered by 2 types of isolated spines: one type ≤ 0.6 µm high, mostly conical narrowing to an obtuse apex; the second type smaller, ≤ 0.4 µm high, conical to irregularly shaped	verrucose, covered by only 1 type of isolated, rather elongated verrucas, bases sometimes slightly broadened, ≤ 0.4 µm high
Basidia	(21–)22–27(–31) × (6–)6.8–8.4(–9) µm	(26–)27–33(–36) × (7–)7.8–9 µm
Cheilocystidia	(24–)37.9–52(–64) × (6–)6.3–10.1(–17) µm	(24–)32.8–47.1(–49) × (–4.5)4.9–9.3(–13) µm
Pileipellis hyphae	mostly straight	mostly coiled

As the spores of *C. kubickae* are so distinct and unique within the genus, I consider the species delimitation based on the spore characters sufficient and well established. In conclusion, *C. kubickae* is the oldest legitimate name at species rank for the fungus, and I suggest using it as the correct name. After having compared the type material of *C. kubickae* and *C. cesatii* var. *subsphaerosporus*, I have not found any differences between them (Figs 5, 6). I consider *C. cesatii* var. *subsphaerosporus* identical with *C. kubickae* and I merge it into the synonymy of *C. kubickae*.

Crepidotus subepibryus is another probably closely related taxon. Senn-Irlet (1993) mentioned that the ultrastructure of the spore ornamentation of *C. subepibryus* indicated a close relationship with *C. cesatii*, probably with *C. cesatii* var. *subsphaerosporus*, and she interpreted it as an abnormality of *C. cesatii*. Later, she included *C. subepibryus* into the synonymy of *C. cesatii* var. *subsphaerosporus* (Senn-Irlet 1995). Horak (2005) identified *C. subepibryus* with *C. kubickae* and proposed the former as the correct name. Pouzar (2005) treated *C. subepibryus* as a distinct species. He did not identify it with *C. cesatii* var. *subsphaerosporus*, because the spores of *C. subepibryus* are narrower and distinctly tapered towards the apiculus (Pouzar 2005). I consider the fungus unidentifiable at present because only two specimens of *C. subepibryus* (both from the type locality) are hitherto known.

Acknowledgments

Fruitful discussion on draft manuscript and review of the final text by Zacharoula Gonou-Zagou (University of Athens, Faculty of Biology, Greece) and Pavel Lizoň (Institute of Botany SAS, Bratislava, Slovakia) are acknowledged. Karol Marhold (Institute of Botany SAS, Bratislava) and Zdeněk Pouzar (National Museum, Praha, Czech Republic) for advisory notes on the nomenclature. Thanks go also to Anna Ronikier (Institute of Botany PAS, Krakow, Poland) who arranged SEM analyses at the Laboratory of Field Emission Scanning Electron Microscopy and Microanalysis, the Institute of Geological Sciences of the Jagiellonian University (Kraków). The SEM analyses were also made at the State Geological Institute of Dionýz Štúr (Bratislava). I also thank to Anna Guttová (Institute of Botany SAS, Bratislava) for lichen identification, and Ján Ripka (Daphne – Institute of Applied Ecology, Bratislava, Slovakia) for technical assistance with the figures. The Slovak Grant Agency VEGA (grants 2/7071/27 and 2/0140/08) supported this study.

Literature cited

Comesaña P, Castro ML. 2000. Fragmenta chorologica occidentalia, Fungi 7460–7497. Anales Jard. Bot. Madrid 58: 170–172.

Gerault A. 2005. Florule evolutive des *Basidiomycotina* du Finistere. *Homobasidiomycetes, Cortinariales,* Version 2.0. [http://projet.aulnaies.free.fr/Florules/CORTINARIALES.pdf (viewed online on 1 April 2009)].

Gonou-Zagou Z, Delivorias P. 2005. Studies on *Basidiomycetes* in Greece 1: The genus *Crepidotus*. Mycotaxon 94: 15–42.

Hesler LR, Smith AH. 1965. North American Species of *Crepidotus*. Hafner Publishing Company, New York, London.

Horak E. 2005. Röhrlinge und Blätterpilze in Europa. Elsevier GmbH, Spektrum Akademischer Verlag, Heidelberg.

Kühner R, Romagnesi H. 1953. Flore Analytique des Champignons Supérieurs (Agarics, Bolets, Chanterelles). 1st ed. Masson et Cie, Paris.

Lange JE. 1938. Studies in the Agarics of Denmark. XII. Dansk Bot. Ark. 9(6): 1–104.

Lange JE. 1939. Fl. Agaric. Danic. Vol. 4. The Society for the Advancement of Mycology in Denmark, the Danish Botanical Society, Copenhagen.

Lange JE. 1940. Fl. Agaric. Danic. Vol. 5. The Society for the Advancement of Mycology in Denmark, the Danish Botanical Society, Copenhagen.

Pilát A. 1949. Ad Monographiam Crepidotorum Europaeorum Supplementum I. Stud. Bot. Čechoslov. 10: 149–154.

Pouzar Z. 2005. Klíč na určování našich trepkovitek (*Crepidotus*) a poznámky k nim. (A key to our species of the genus *Crepidotus* and notes to them.) Mykol. Listy 93: 1–9.

Ripková S, Blanár D. 2004. Výskyt druhov rodu *Crepidotus* na Muránskej planine a v priľahlej oblasti Slovenského rudohoria. (The occurrence of the species of the genus *Crepidotus* in the Mauránska planina Mts., and in the adjacent area of the Slovenské Rudohorie Mts.) Reussia 1, Supplement 1 : 49–67.

Roux P. 2006. Mille et un champignons. Édition Roux, Sainte-Sigolène.

Senn-Irlet B. 1992. Type studies in *Crepidotus* – I. Persoonia 14: 615–623.

Senn-Irlet B. 1993. Type studies in *Crepidotus* – II. Persoonia 15: 155–167.

Senn-Irlet B. 1995. The genus *Crepidotus* (Fr.) Staude in Europe. Persoonia 16: 1–80.

Vellinga EC. 1988. Glossary. 54–64, in: C Bas et al. (eds.), Flora Agaricina Neerlandica Vol. 1., AA. Balkema, Rotterdam.

Walleyn R, Vandeven E (eds). 2006. Standaardlijst van *Basidiomycota* en *Myxomycota* van Vlaanderen en het Brussels Gewest. Instituut voor Natuur- en Bosonderzoek, Brussel. [http://www.inbo.be/docupload/3062.pdf (viewed online on 1 April 2009)].